Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Analysis of Competitive Market Conditions	)	WC Docket No. 13-135
With Respect to Mobile Wireless,	)	
Including Commercial Mobile Services	)	

COMMENTS OF SPRINT NEXTEL CORPORATION

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Sprint Nextel Corporation ("Sprint"), pursuant to the Public Notice released on May 17, 2013, (DA 13-1139), hereby respectfully submits its comments regarding competitive conditions in the mobile wireless market. As discussed below, the retail commercial mobile radio services ("CMRS") market currently is competitive, with carriers such as Sprint working aggressively to provide high quality and attractively priced services over its rapidly expanding broadband network. This competition, however, remains at risk if the Commission does not pursue a pro-competitive regulatory agenda.

Serious distortions at the wholesale level – particularly in special access and interconnection practices and policies – continue to affect competition at the retail level, and ILEC-centric high-cost USF policies skew both intermodal and wireless competition. Likewise, lack of access to critical low band spectrum threatens to undermine the ability of smaller carriers to continue to compete with the two dominant wireless providers. The Commission should incorporate into its competitive analysis the propagation and regulatory characteristics of different spectrum bands because they directly affect carriers' ability and cost to deploy and deliver wireless communications services.

To promote and ensure vigorous competition in the mobile wireless market, the Commission must act expeditiously to address these distortions, and must carefully craft and implement spectrum policies to ensure fair access to this vital resource, including the modification of its spectrum screen to more accurately reflect the way in which industry participants view, acquire, and deploy spectrum.

I. INTRODUCTION AND SUMMARY.

As the Commission found in the *Sixteenth Report*,[1] there are many factors which indicate that the retail wireless market is currently competitive: over 99% of the US population has a choice (two or more) of mobile wireless service providers; the four largest nationwide mobile service providers are upgrading and expanding their networks to 3G and 4G; the number of mobile devices and the volume of data being transmitted continue to grow; retail prices have been stable or have declined; and demand for spectrum continues to increase.

The market situation as of the first quarter of 2013, the most recent period for which data is generally available, suggests that these positive trends have continued, at least as regards Sprint. In the past year, Sprint has spent billions of dollars to upgrade and extend its network and to improve service to its 55.2 million wireless customers; introduced several new state of the art handsets; maintained its hugely popular flat-rated unlimited usage calling plan while also offering a range of other prepaid and postpaid service plans; and implemented usage alerts to notify customers when they are approaching spending or usage limits to avoid bill shock.

[1] *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report* released March 21, 2013 (FCC 13-34), pp. 6-19.

Sprint's competitive efforts and accomplishments are particularly noteworthy in light of the significant contra-competitive headwinds against which it continues to battle. The U.S. telecommunications market generally, and the wireless market specifically, continue to be dominated by the two legacy Bell operating companies. Consider, for example, the following: [2]

		---------- Quarter 1, 2013 ----------		
	Market Cap	**Total Revenues**	**Wireless Revenues**	**Wireless Customers**
AT&T	$191.4 b.	$31.4 b.	$16.7 b.	107.3 m.
Verizon	$138.5 b.	$29.4 b.	$19.5 b.	98.9 m.
Sprint	$ 22.0 b.	$ 8.8 b.	$ 8.1 b.	55.2 m.
T-Mobile US	$ 3.0 b.	$ 4.7 b.	$ 4.7 b.	34.0 m.

AT&T and Verizon together account for approximately 2/3 of the wireless market, as measured by customers and revenues: as of June 2012, their combined 199.4 million wireless customers were an estimated 62% of the U.S. wireless market,[3] and their combined wireless revenues for January-June 2012 were an estimated 68% of the total wireless market.[4] It is very possible that Verizon and AT&T's combined market share may have increased over these levels given their strong financial results and increased

[2] Market capitalization as of June 4, 2013. Revenue and customer data are for Q1 2013 (*see* <http://news.verizonwireless.com/news/2013/04/verizon-first-quarter-2013-earnings.html>; <http://www.att.com/Investor/Earnings/1q13/ib_final_1q13.pdf>; http://investors.sprint.com/Cache/1500048792.PDF?Y=&O=PDF&D=&fid=1500048792&T=&iid=4057219; <http://investor.t-mobile.com/phoenix.zhtml?c=177745&p=quarterlyearnings>).

[3] CTIA has estimated that as of June 2012, there were approximately 322 million wireless subscribers. *See* Robert Roche, *CTIA's Wireless Industry Indices*, released November 2012, Table 2 ("CTIA Study"). According to their quarterly reports, at the end of the second quarter of 2012, AT&T had 105.2 million wireless customers, and Verizon Wireless had 94.2 million customers.

[4] According to their quarterly earnings reports, AT&T and Verizon's wireless revenues for the first half of 2012 totaled $62.6 billion, while industry wireless revenues were an estimated $92.3 billion (CTIA Study, p. 8).

customer counts in the subsequent three quarters. The Department of Justice and the Commission, however, did prevent even greater market dominance by AT&T and Verizon when they denied AT&T's proposed acquisition of T-Mobile.

Verizon and AT&T also have a tremendous competitive advantage due to their corporate affiliations -- they both have wireline affiliates which control bottleneck facilities that are critical to the provision of wireless service, and which receive hundreds of millions of dollars in high-cost USF support. AT&T and Verizon remain dominant in the provision of special access services, which are used to provide critical backhaul from cell sites, and which are grossly overpriced and subject to anticompetitive terms and conditions. Inefficient and costly TDM interconnection arrangements and refusal by the RBOCs to interconnect on an IP basis continue to drive up other carriers' costs and to impede the transition to all-IP networks. Vast high-cost subsidies to ILECs (paid in large part by wireless service providers such as Sprint) and ILEC-centric high-cost universal service policies continue to distort competition.

Moreover, AT&T and Verizon hold a significant advantage over their competitors through their control of the vast majority of spectrum below 1 GHz. These extraordinarily useful spectrum bands provide significantly greater coverage (allowing less infrastructure investment and lower operating costs to achieve wide-area coverage) and better in-building penetration than spectrum bands above 1 GHz – critical factors in bringing high-speed, reliable wireless broadband service to all Americans. The looming spectrum crunch threatens continued growth in the wireless market, particularly for smaller carriers if additional spectrum is, as a practical matter, made available only to the largest and richest carriers. Prompt Commission action to address each of these issues is

needed to knock down these competitive barriers, promote growth, and fuel broadband deployment.

II. SPRINT HAS CONTINUED TO ACT AS A COMPETITIVE CATALYST IN THE WIRELESS MARKET.

In the past year, Sprint has continued to act as a competitive catalyst in the CMRS market. One keystone to Sprint's competitive efforts has been its Network Vision project. Network Vision is a multi-billion initiative to consolidate Sprint's networks and technologies into a single nationwide 3G and 4G network, resulting in enhanced voice quality, improved data speeds, and expanded coverage for Sprint customers. Sprint is installing new integrated, multimodal equipment in all of its tens of thousands of Network Vision cell sites; Sprint's 800 MHz and 1.9 GHz spectrum are being integrated; and upgrades to Internet Protocol technology continue to be deployed. To effectuate this ambitious network upgrade, Sprint has invested $7.2 billion in capital expenditures over the past 5 quarters (Q1 2012 – Q1 2013), and anticipates investing billions of dollars more to complete Network Vision. As of the first quarter of 2013, Sprint had more than 13,500 Network Vision sites on-air and more than 25,000 sites under/ready for construction. Sprint has launched 4G LTE in 88 cities, and expects to launch 4G LTE in over 170 additional cities in the coming months, with an estimated 200 million covered POPs by end of year 2013.

In addition to its multi-billion dollar Network Vision project, Sprint has focused its competitive efforts on direct end-user initiatives. Sprint has been the leader in simple-to-understand calling plans with unlimited voice/data: while other service providers have capped usage and eliminated their unlimited calling plans, Sprint's Simply Everything

plan offers unlimited (on the Sprint network) anytime minutes, messaging, and data for $109.99 per month. Sprint offers smaller bundles at lower price points as well.

Sprint also has been a pioneer in the prepaid/no contract wireless market, offering unlimited calling plans, a "shrinking payment" plan (decreasing monthly payments for customers who pay their bills on-time for 6 consecutive months), and wireless Lifeline service (250 minutes and 250 texts per month for no fee to eligible consumers). Sprint continues to offer and introduce iconic smartphones (86% of Sprint postpaid platform handset sales were smartphones in Q1 2013). For customers on metered calling plans, Sprint provides free alerts for voice and/or text usage, for data usage on the Sprint network and while roaming, and for international usage, advising customers when they are approaching their plan limits in order to prevent bill shock.

These Sprint initiatives are spurring competition in the wireless market, offering end users an attractive and viable alternative to the wireless services offered by AT&T and Verizon. To enhance and expand competition, however, the Commission must address the underlying structural challenges discussed below.

III. EXCESSIVELY PRICED SPECIAL ACCESS BACKHAUL REMAINS A SERIOUS COMPETITIVE ROADBLOCK.

Wireless carriers rely on backhaul to connect their cell towers to their networks. These backhaul connections are primarily provisioned over wireline facilities, although in limited instances microwave or other wireless spectrum is used. This backhaul is a significant portion of the cost of providing wireless service. As Sprint has noted elsewhere, the cost of backhaul is approximately 30 percent of the operating cost of

providing wireless service.[5] For this reason, backhaul has an important effect on the cost of wireless service.

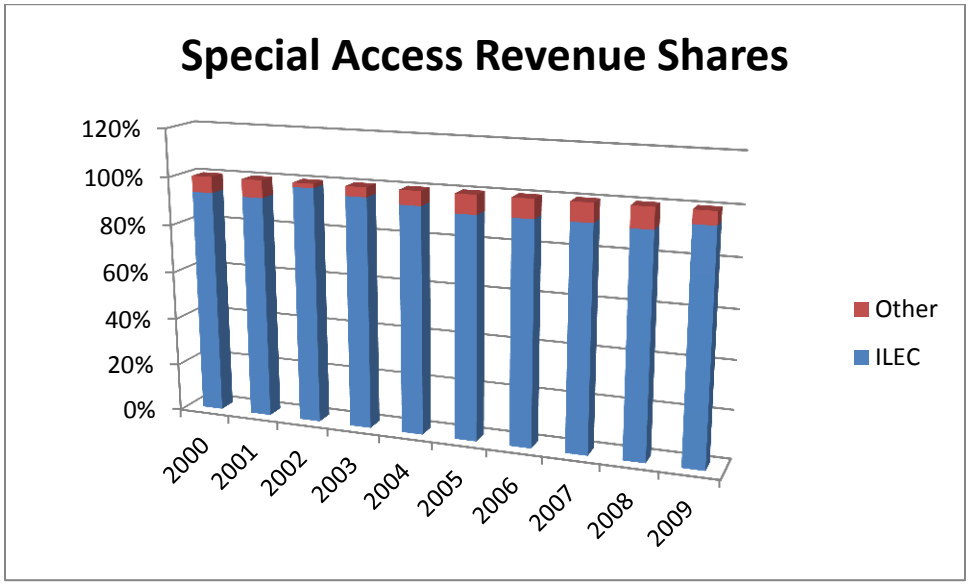
There is substantial evidence that the price of backhaul is well above cost. Whether compared to the regulated price of unbundled network elements (UNEs) or to the competitive price of broadband services that offer similar speeds (*e.g.*, Verizon FiOS, or AT&T U-verse), the price of single DS1s and DS3s appear to be well above cost.[6]

By themselves, these above-cost prices would not necessarily have a detrimental effect on competition for wireless service, although they would cause the price of wireless service to be higher than it needs to be. However, because two of the largest sellers of special access, Verizon and AT&T, are also the largest wireless carriers, above-cost backhaul prices are skewing competition in the wireless market. Verizon and AT&T can self-provision backhaul in their ILEC service territories, and thus face only the economic cost of backhaul rather than the above-cost prices that other wireless carriers must face. In addition, because they are both sellers and purchasers of backhaul, they have better information on the true cost of backhaul. This informational advantage gives them a stronger bargaining position in the limited cases where there are alternative providers of backhaul, which could allow them to achieve lower backhaul prices than the non-affiliated wireless carriers, even outside their respective ILEC territories.

There can be little doubt that the ILECs dominate the special access market. For example, according to data reported in the Commission's Monitoring Report, the ILECs maintained a market share of revenue from interstate special access and private line

[5] *See, e.g., Special Access for Price Cap Local Exchange Carriers*, WC Docket No. 05-25, Sprint *ex parte* letter dated October 5, 2007, p. 4.
[6] *See, e.g., Special Access for Price Cap Local Exchange Carriers*, WC Docket No. 05-25, Sprint comments filed August 8, 2007, p. 23 and Exhibit 3; Sprint *ex parte* letter dated August 22, 2007, Slide 11.

services sold to other carriers of better than 90 percent from 2000, when the data was first reported, through 2009.[7]



Sprint is currently revamping the backhaul it uses at its existing cell towers under its Network Vision project, converting backhaul from time division multiplexing (TDM) based DS1s and DS3s to Internet Protocol (IP) based Ethernet backhaul. The Network Vision project created a unique situation in which more than 30,000 cell sites were put out for bid at one time, seeking not just DS1 or DS3 capacity, but also circuits with a minimum of 100MB capacity at each tower. While this bidding process generated a unique opportunity for alternative vendors, even this unique circumstance resulted in incumbent local exchange carriers serving a large percentage of the network.

Moreover, future wireless network expansion is not expected to depend upon these large 100 to 200 MB circuits. Future network development is expected to depend upon microcells to expand capacity. These microcells require substantially lower

[7] *See* Table 1.5 of the 2002 through 2011 Monitoring Reports. This table summarizes revenue data reported by carriers that is reported on Form 499-A. These data are used to set the universal service fund contribution factor. As of the Monitoring Report for 2012, the Commission no longer reports data separately for the ILECs and other carriers.

capacity (a few DS1s) backhaul for which there is little competition. Because Verizon and AT&T continue to dominate the DS1 market, smaller carriers will continue to be dependent upon these ILECs to provision services.

The Commission is currently reviewing its regulation of special access service in WC Docket No. 05-25, including planning a mandatory data request to allow it to examine the ILECs' market power.[8] Sprint believes that once the Commission collects and examines the data, it will confirm that the ILECs are and will remain dominant in the provision of special access and backhaul. In order to ensure that the wireless industry remains competitive, the Commission must adopt appropriate regulation of these services.

IV. JUST AND REASONABLE INTERCONNECTION ARRANGEMENTS WITH ILECs ARE CRITICAL TO WIRELESS COMPETITION, BUT HAVE BEEN EXTREMELY DIFFICULT TO ACHIEVE.

There is no dispute that interconnection of competing networks is a foundational prerequisite to the development of competition. As the Commission has stated, "[h]istorically, interconnection among voice communications networks has enabled competition and the associated consumer benefits that brings through innovation and reduced prices."[9]

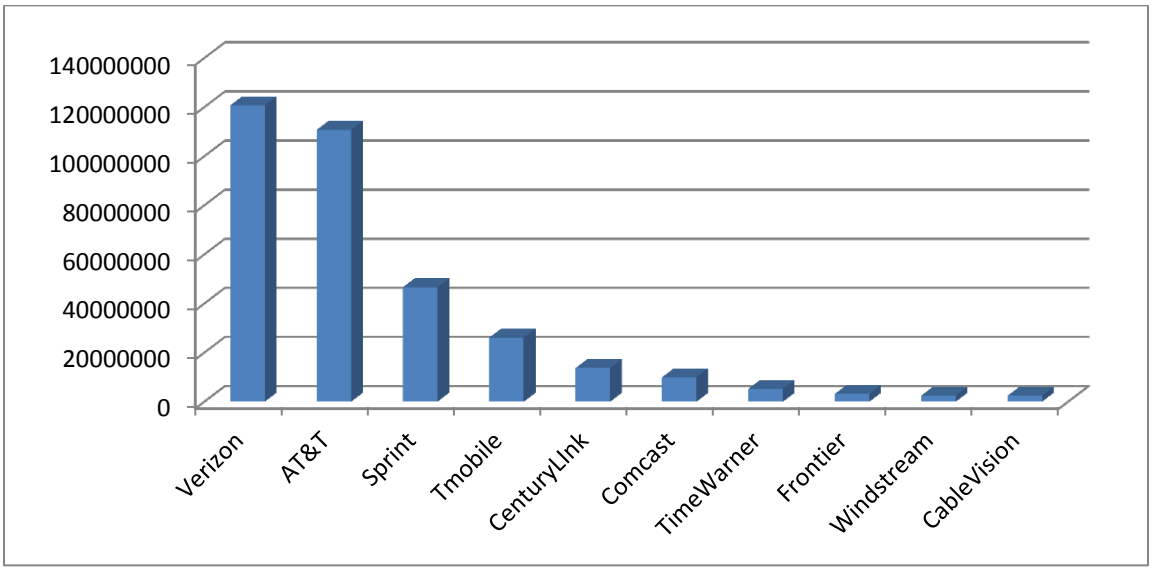
There is also no dispute that a nationwide public network is possible only if AT&T and Verizon agree, or are compelled, to interconnect with other service and

[8] *See Special Access for Price Cap Local Exchange Carriers*, WC Docket No. 05-25, *Report and Order and Further Notice of Proposed Rulemaking* released December 18, 2012 (FCC 12-153).

[9] *See Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing an Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up; Universal Service Reform – Mobility Fund*, 26 FCC Rcd 17665, 18044 (para. 1009) (2011) ("*ICC/USF Transformation Order and Further NPRM*").

network providers. AT&T and Verizon subscriber counts dwarf all other industry providers, and each of them controls more than twice the subscribers as Sprint, the next largest wireless carrier:

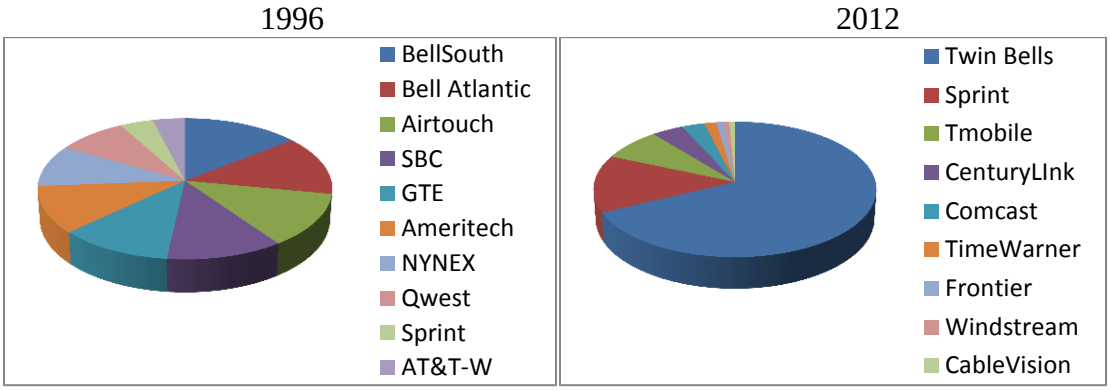
2012 Landline and Wireless Subscribers



In fact, as a result of Bell landline and wireless consolidations, industry subscriber share today is significantly more concentrated than it was in 1996 when Congress sought to open the Bell monopolies to competition. In 1996, no carrier had more than 14% of the nation's wireless and landline subscribers. Today, AT&T and Verizon, having consolidated all but two of the top 10 carriers from 1996, control a combined 68% of the nation's subscribers.[10]

[10] In addition to the direct corporate takeovers, Verizon is the wholesale supplier of wireless service for Centurylink.

Top 10 Carriers
Landline and Wireless Subscribers



While existing TDM interconnection arrangements "work" today in the sense that voice calls are successfully originated and terminated across different networks, these arrangements are generally extremely costly and inefficient, and are inconsistent with the way modern, more efficient IP networks are engineered. Of even greater concern is the refusal of certain incumbent LECs – in particular, AT&T and Verizon – to enter into interconnection arrangements that utilize IP technology either at all, or at the just, reasonable and nondiscriminatory rates, terms and conditions required by statute.[11] AT&T, for example, has erected the following interconnection roadblocks against its competitors:

- AT&T has stated that it has "no duty" under the Act to interconnect with Sprint on an IP basis;

[11] *See, e.g., SprintCom Inc., WirelessCo, LP, NPCR, Inc. d/b/a Nextel Partners and Nextel West Corp., Petition for Arbitration to Establish an Interconnection Agreement with Illinois Bell Telephone Company*, Illinois Commerce Commission Docket No. 12-0550, Sprint Post-Hearing Reply Brief filed April 2, 2013 ("Sprint ICC Reply Brief"); *AT&T and NTCA TDM-to-IP Voice Transition Petitions*, GN Docket No. 12-353, Sprint comments filed on January 28, 2013, p. 14 ("Sprint TDM-to-IP comments"), and reply comments filed February 25, 2013, pp. 2-5 ("Sprint TDM-to-IP reply comments"). *See also*, Verizon TDM-to-IP comments, p. 36 ("…the Communications Act [does] not require interconnection in any particular format…").

- AT&T has refused to interconnect at a handful of centralized locations, instead forcing competitors to establish and maintain an inefficiently large and costly number of interconnection points;
- AT&T has continued to assess inflated interconnection facility leasing fees;
- AT&T has continued to impose originating access charges on land-to-mobile calls;
- AT&T has refused to apportion interconnection facility costs, despite the fact that AT&T shares and benefits from use of the interconnection facilities;
- AT&T has refused to allow the comingling of traffic;
- AT&T has refused to provide transit at cost-based rates.[12]

Each of these issues poses a major threat to competition in the wireless market and to the deployment of broadband networks, and is squarely within the scope of the *ICC/USF Further NPRM.* The Commission should accordingly complete this pending FNPRM, and issue an order which adopts a handful of default IP interconnection rules.

Specifically, the Commission should affirm that its IP good faith negotiations and interconnection requirement applies to incumbent LECs; mandate that the negotiation/interconnection requirement should apply, upon request, to both an IP network operator and all of its affiliates providing voice services; that unless the parties agree otherwise, IP voice traffic should be exchanged at the same locations where non-voice IP traffic is exchanged today and that the IP voice traffic will be exchanged on a settlements-free basis; and that every terminating network operator should be responsible for any IP-to-TDM conversions needed to complete incoming voice calls to its customers.[13]

The Commission also can encourage efficient interconnection by addressing certain intercarrier compensation issues. First, as discussed in the *ICC/USF Further*

[12] *See* Sprint ICC Reply Brief.
[13] See *ICC/USF Further NPRM*, Sprint comments filed February 24, 2012, pp. 1-52, and reply comments filed March 30, 2012, pp. 4-38; *see also* Sprint TDM-to-IP comments, pp. 27-32, and Sprint TDM-to-IP reply comments, pp. 5-6.

NPRM, the Commission should expand the bill-and-keep intercarrier compensation mechanism to include the remaining transport, tandem switching and originating access charges. These rate elements represent a significant and growing percentage of overall intercarrier charges, and in their current form, provide no incentive to incumbent LECs to establish more efficient interconnection arrangements. Second, the Commission should require incumbent LECs to provide transit and interconnection facilities at incremental cost-based rates, and should strongly discourage incumbent LECs from requiring a competitor to establish or maintain more than a single POI per LATA using TDM interconnection.

In summary, inefficient interconnection remains a barrier to fully effective competition. To help ensure robust competition in the wireless industry, Sprint urges the Commission to act expeditiously to affirm interconnection principles and to address outstanding interconnection issues raised in the *ICC/USF Further NPRM*.

V. ILEC-CENTRIC USF POLICIES CONTINUE TO SKEW THE COMPETITIVE BALANCE.

In its *ICC/USF Transformation Order*, the Commission revised the high-cost universal service fund mechanism, providing for explicit support for broadband deployment, phasing out legacy support mechanisms, and cushioning the impact on ILECs of the Order's intercarrier compensation reforms. While some of the goals underlying the Commission's USF policies (*e.g.*, transitioning to bill-and-keep for certain ICC rate elements, making subsidies explicit, encouraging broadband deployment) are in the public interest, the resulting high cost/broadband universal service fund is far too large, and its ILEC-centric focus skews both intermodal competition and wireless competition.

The high-cost USF budget has been set at $4.5 billion per year for the next several years.[14] Of this amount, over *84%* in support is slated for ILECs: the Connect America Fund ("CAF") Phase 2 provides $2.0 billion per year to rate-of-return ILECs, and $1.8 billion to the price cap ILECs on a right of first refusal basis, compared to the $500 million Mobility Fund Phase 2 ($100 million of which is designated for Tribal areas), and the $100 million Remote Area Fund. The ILECs' CAF subsidies are even greater than their share of legacy USF subsidies; for example, of the $3.9 billion in legacy (non-CAF) high-cost USF support distributed in 2012, $2.95 billion (*75.5%*) was given to ILECs, compared to $959.3 million to competitive carriers.[15]

The Commission's ILEC-centric USF policies create a drag on competition for several reasons. First, the disparity in support allocated to ILECs as compared to mobile and other competitive carriers is glaring. A multi-billion, multi-year 6:1 ($3.8 billion versus $600 million) subsidy ratio is bound to affect intermodal competition, in effect tipping the scale in favor of wireline technologies and wireline carriers.

Second, the fact that the two largest wireless carriers are directly affiliated with ILECs who receive hundreds of millions of dollars in USF has a direct impact on competition in the wireless market. In 2012, AT&T's ILECs received an estimated $177 million in high-cost USF, and Verizon's ILECs received an estimated $112 million.[16] For AT&T Corporation and Verizon Corporation, the availability of these large ILEC

[14] *ICC/USF Transformation Order*, para. 17.
[15] *See 2012 Universal Service Monitoring Report*, CC Docket No. 98-202, Table 2.11 (data through October 2012).
[16] Based on Q4 2012 disbursements (USAC Form HC01) annualized. AT&T ILECs included in this estimation were Cincinnati Bell, Nevada Bell, Pacific Bell, South Central Bell, Southwestern Bell, SNET, and Southern Bell. Verizon ILECs included were GTE and Verizon. In addition, AT&T was eligible for but declined $47.9 million in CAF Phase 1 support, while Verizon was eligible for but declined $19 million in CAF Phase 1 support.

subsidies "frees up" corporate cash that can then be made available to their respective wireless entities, giving AT&T Wireless and Verizon Wireless a substantial competitive advantage over carriers such as Sprint which do not have a subsidized ILEC affiliate.

Third, high-cost USF subsidies funneled to ILECs are financed in large part from contributions from wireless carriers such as Sprint and its subscribers. End users do not have unlimited telecommunications budgets, and dollars siphoned off to finance ILEC CAF subsidies are dollars that are not available to purchase a richer Sprint calling plan or an additional product or service. Thus, not only is Sprint not eligible to receive ILEC high-cost subsidies; it also is required to finance these ILEC payments through foregone sales to its own customers.

To reduce the anti-competitive impact of ILEC-centric USF policies, the Commission should reduce the overall size of the ILEC high-cost and broadband subsidies.

VI. THE COMMISSION SHOULD REVISE ITS ANALYSIS OF SPECTRUM USED FOR MOBILE WIRELESS SERVICES AND ALIGN ITS ANALYSIS AND POLICIES MORE CLOSELY WITH THE WAYS IN WHICH INDUSTRY PARTICIPANTS VIEW AND DEPLOY SPECTRUM INPUTS.

In its Public Notice, the Commission solicits input and feedback on its past analysis of spectrum used for mobile wireless services, the spectrum holdings of mobile wireless service providers, and the competitive effects of spectrum holdings.[17] Most notably, the Commission asks how to assess the ways in which spectrum holdings "affect the structure, conduct, and performance of the mobile wireless services industry." In particular, the Commission seeks comment on how different propagation characteristics

[17] Public Notice at 5.

of different spectrum bands influence the deployment, use, and costs of different spectrum bands – all of which profoundly shape the scope and level of competition in the wireless industry.

A. The Commission's Latest Analysis on Spectrum Used for Mobile Wireless Services Represents an Important Refinement of its Spectrum Policies

The *Sixteenth Report* represents an important step towards a more nuanced analysis of spectrum that more closely comports with the ways in which operators view, acquire and deploy spectrum resources. This report builds on previous improvements contained in the *Fifteenth Report* and *Fourteenth Report*, which for the first time acknowledged the characteristics of spectrum bands – most notably propagation, but also regulatory – that affect the ability of operators to competitively deploy mobile broadband service.

For instance, while in the *Fifteenth Report* the Commission tentatively noted that "some observers have noted important complementarities associated with a provider having access to spectrum in both lower and higher frequency bands,"[18] in the *Sixteenth Report* the Commission appropriately formalized this notion – axiomatic to all wireless operators – into an affirmative statement: "As a general matter, a provider is best positioned if it holds complementary spectrum bands."[19] Indeed, since the *Fourteenth*

[18] Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Fifteenth Report*, 26 FCC Rcd 9664, 9832 ¶ 289 (2011) (*Fifteenth Report*).

[19] *See, e.g.*, *Third Report and Fifth Report* through *Thirteenth Report*, *available at* <http://www.fcc.gov/reports?filter_terms%5b%5d=0&topics%5b%5d=0&filter_terms%5b%5d=96&op=Apply+Filter>. Notably, the *First Report*, *Second Report* and *Fourth Report* drew important distinctions between cellular band spectrum and PCS band spectrum. Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to

Report, the Commission has increasingly acknowledged the important differences (propagation and otherwise) between spectrum bands. Whereas prior reports (with three early exceptions) did not include a single reference to propagation, for example, or note any difference between commercial spectrum bands below 1 GHz and those above, the Commission's last three reports have devoted significant attention to these important subjects.[20]

B. Developments within the Wireless Industry Have Only Strengthened the Need for Revision of the Commission's Analytical Tools and Policies with Respect to Spectrum

The timing of this paradigm shift is not happenstance. Prior to the *Fourteenth Report* (released in 2010, reflecting the "market conditions prevailing in 2008 and 2009"[21]), the nation's wireless industry – and the Commission's analytical tools for examining competition within it – was marked by a period of relative competitive parity among wireless operators. The Commission's analysis during this period treated

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Commercial Mobile Services, 10 FCC Rcd 8844, 8860 ¶ 47 (1995) (*First Report*); Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, 12 FCC Rcd 11266, 11289 (1997) (*Second Report*) ("Generally, broadband PCS system design will be similar to cellular…However, because of the propagation characteristics of the broadband PCS frequencies, may more cells and base stations will be required than for cellular. This may increase the cost of infrastructure for broadband PCS compared to that for cellular."); Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, 14 FCC Rcd 10145, 10156 (1999) (*Fourth Report*) ("Since broadband PCS spectrum does not propagate as far as cellular spectrum, broadband PCS operators must spend more capital than cellular operators to cover the same area. To contain costs, some broadband PCS operators in rural areas limit their coverage to urban centers and the roads connecting them, and impose roaming fees on users who travel outside of these areas.").

[20] Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, including Commercial Mobile Services, WT Docket No. 11-186, *Sixteenth Report,* at 17 (2013) (*Sixteenth Report*).

[21] *Fourteenth Report, at ¶ 4.*

spectrum as market participants generally viewed spectrum: as a largely undifferentiated input, accessible to a wide range of operators – most of them offering super-regional service, achieving nationwide coverage through roaming and other arrangements.

Beginning in 2008 and accelerating largely in 2009 and 2010, however, the paradigm of relatively undifferentiated spectrum inputs for commercial wireless services no longer held. With the maturation of the nationwide operators, offering facilities-based nationwide coverage, the dramatic growth in broadband services and technologies, and the introduction and/or reconfiguration of a number of different spectrum bands, operators increasingly incorporated significantly more granular factors in their analysis of spectrum. Beyond a focus on quantity, operators increasingly looked to the extent to which bands allow them to deploy devices leveraging common economies of scale of other intra-band licensees, the extent to which adjacent operations potentially encumber full operational use or pose interference risks, and the specific propagation characteristics of different spectrum bands of frequencies.[22]

Just two examples of these critical distinctions between spectrum bands help illustrate the profound competitive importance carriers place on specific bands –which should be incorporated in Commission analysis of spectrum and its effects on downstream competition. For one, possession of spectrum below 1 GHz offers operators tremendous competitive advantages – with significantly greater coverage (requiring less

[22] This range of characteristics affecting the utility, value, and, as a consequence, competitive impact, of different spectrum bands was identified by the Department of Justice in a recent filing. *See Ex Parte* Submission of the United States Department of Justice, WT Docket No. 12-269, at 13 (filed April 11, 2013) (noting availability of network equipment and devices supporting a specific band, the presence of band classes that add weight and cost to consumer devices, the degree of international harmonization of a band, differing interference risk and regulatory obligations, and chiefly, propagation differences).

infrastructure investment and lower operating costs to achieve wide-area coverage) and better in-building penetration – over bands above 1 GHz.

Contrary to the assertions of operators with extensive holdings of spectrum below 1 GHz, there is no competitive parity between these bands. As former FCC Chief Technologist Jon Peha notes, the lower cost to acquire higher-frequency spectrum does not make up for the enormous investments necessary to replicate the coverage of low-band spectrum: an operator with a portfolio disproportionately comprised of higher frequency spectrum must either "spend much more deploying and operating its infrastructure" (passing these costs on to customers in the form of "significantly higher prices" – and thus reducing the carrier's competitiveness) or "it can provide service that covers highways and population centers but that is not ubiquitous which means significantly 'lower quality.'"[23] Former FCC Chief Economist Jonathan Baker echoes this sentiment, noting that the alleged advantages of high-frequency spectrum (notably, easier cell splitting ability in dense urban areas, potentially providing greater capacity) can be accomplished with low-frequency spectrum. By contrast, the "physical properties of high-frequency spectrum make it costly and less practical for wireless providers to use high-frequency spectrum to serve the coverage function more typically associated with low-frequency spectrum."[24] The "cost penalty for providing service without using a mix of spectrum frequencies" is therefore "not symmetric." Instead of incurring the substantial build-out costs to replicate low-band coverage, Baker explains, an operator with high-frequency spectrum would adopt a "targeted build-out approach rather than

[23] Jon Peha, "Bringing Weight to the Spectrum Screen: A Response to AT&T," WT Docket No. 12-268, at 4 (filed March 31, 2013).
[24] Jonathan Baker, "Spectrum Auction Rules that Foster Mobile Wireless Competition," at 15, Exhibit B of Reply Comments of T-Mobile USA, Inc., GN Docket No. 12-268 (filed March 12, 2013) ("Baker Declaration").

spending more to build-out to provide equivalent service" – in other words, as Peha notes, offer a significantly lower quality service.[25] Carriers must have access to low-band spectrum to be able to offer a sustainable competitive, nationwide mobile broadband service. Indeed, for mobile broadband to become the 'fourth pipe', as the Commission has routinely stated a desire to see, operators must possess low-band frequencies which allow robust mobile data coverage *inside buildings*.[26]

Beyond propagation differences, acquisition of greenfield spectrum cleared of incumbents (for instance, the 700 MHz band) provides for less costly and quicker deployment than spectrum bands that require extensive incumbent clearing (as T-Mobile and prospective cable entrants were forced to undertake for the AWS-1 band,[27] and as Sprint undertook in the 2 GHz band) or reconfiguration to resolve interference risks (examples include Sprint's reconfiguration of the 800 MHz band, Clearwire's efforts in the 2.5 GHz band, and AT&T's efforts in the WCS band). The ease with which operators

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[25] Baker Declaration, at 17.

[26] Simon Forge, Colin Blackman, & Erik Bohlin, *The Mobile Provide: Economic Impacts of Alternative Uses of the Digital Dividend*, SCF Associates Ltd, at 8 (Sept. 2007) <http://camfordassociates.com/wp-content/uploads/2010/11/DD-Final-PUBLIC-Report-v10.1.pdf>. ("Better propagation means fewer base stations. Thus the network infrastructure investment (CAPEX) is nearly seven times higher if wireless operators have to use 3.5GHz compared to the larger cell sizes at 700 MHz, or even higher at the lower frequencies in the Digital Dividend. **Moreover, improved propagation qualities also means better reception for mobile phones *inside buildings* – a factor that may hold back substitution of wireless for fixedline communications in the future.** Thus the UHF band has particularly valuable properties for wireless communications networks, using any generation of technology – whether it be 2G cellular, 2.5G, 3G or 4G or, as we look to the future, novel radio technologies such as WiMax or WiFi.") (emphasis added).

[27] Petition to Deny of T-Mobile USA, Inc., WT Docket No. 12-4, Exhibit B: Declaration of Neville R. Ray, CTO T-Mobile USA, at 11 (noting the extensive and rapid clearance of federal government users T-Mobile undertook in the AWS-1 band while less spectrum constrained licensees such as Verizon did not engage in extensive clearance efforts to deploy service in the band).

can deploy service – and particularly new technologies, as Verizon did with LTE in its 700 MHz C Block – greatly impacts their competitiveness.

The Commission has begun to acknowledge these important differences between spectrum bands – differences that engender fundamental competitive differences in the ability of operators to deploy robust and nationwide service. For instance, in the *Sixteenth Report* the Commission notes that "given the superior propagation characteristics of spectrum under 1 GHz, particularly for providing coverage in rural areas and inside buildings, providers whose spectrum assets include spectrum below 1 GHz may possess certain competitive advantages for providing robust coverage when compared to licensees whose portfolio is exclusively comprised of higher frequency spectrum."[28] Unfortunately the Commission follows this acknowledgment with an equivocal statement, citing commenters such as Verizon Wireless and AT&T, suggesting that higher frequency spectrum confers its own (allegedly countervailing) advantages – a proposition demonstrably false, as shown by Drs. Peha and Baker. Indeed, the overwhelming deployment and competitive advantages conferred by low-band spectrum have routinely been touted by Verizon and AT&T executives to the financial sector.[29]

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[28] *Sixteenth Report* at ¶ 135.

[29] *See, e.g.,* Fran Shammo, Chief Financial Officer and Executive Vice President, Verizon, *Verizon Communications Inc. at Oppenheimer & Co. Technology & Communications Conference*, FD (FAIR DISCLOSURE) WIRE (Aug. 10, 2011) ("[A]t 700 MHz, the building penetration is phenomenal. So we believe it is a competitive advantage there."); Fran Shammo, Chief Financial Officer and Executive Vice President, Verizon, *Verizon at Morgan Stanley Technology, Media & Telecom Conference*, FD (FAIR DISCLOSURE) WIRE (March 1, 2011) ("We have the 700 MHz contiguous across the United States, which puts us in a different realm than some other carriers."); Ralph de la Vega, President and CEO, AT&T Mobility, *AT&T's First Quarter 2012 Earnings Call*, FD (FAIR DISCLOSURE) WIRE (April 24, 2012) ("[W]e prefer low band spectrum."); Peter Ritcher, Senior Vice President and Wireless Chief Financial Officer, AT&T, *AT&T at Credit Suisse Group Convergence Conference*, FD (FAIR DISCLOSURE) WIRE (March 9, 2011) ("[L]ow-frequency spectrum obviously [has] much better sort of in-building

The increasing importance of spectrum below 1 GHz has been acknowledged by policymakers and regulators worldwide. Ofcom, the UK's regulatory and competition authority for telecommunications, has recognized the "particular importance of sub-1 GHz spectrum." It notes that "Sub-1 GHz spectrum gives advantages over higher frequencies in terms of coverage…It also tends to provide substantially better signal quality and higher download speeds (throughput) within buildings than higher frequencies since lower frequency signals are better at penetrating solid objects. These advantages could mean that national [operators] with a large amount of sub-1 GHz spectrum would have **an unmatchable competitive advantage over those without any sub-1 GHz spectrum**."[30] The Radio Spectrum Policy Group of the European

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penetration, much better build characteristics with that kind of spectrum."); Tony Melone, Executive VP and CTO, Verizon Wireless, "Q&A: Verizon's LTE road map for 2010 and beyond," Network World (February 25, 2010), *available at* http://www.networkworld.com/news/2010/022510-verizon-lte-melone.html?hpg1=bn ("The big thing for us is that 100% of the 700 MHz spectrum we won in the FCC auction a couple years back will be used for 4G services. ***The 700 MHz spectrum gives us tremendous propagation advantages versus the people who are deploying LTE in higher spectrum ranges. 700 MHz spectrum means that there will be fewer sites required and we'll have better in-building penetration***" (emphasis added)); *Transcript: AT&T's Randall Stephenson on the Network's Strength*, CNN MONEY (July 18, 2012), *available at* <http://tech.fortune.cnn.com/2012/07/18/randall-stephenson-att/> ("I would tell you one of the other things, I don't know if we have a 700 megahertz spectrum here, but *one of the beauties of the latest spectrum we bought, **700 megahertz, is in areas like this it propagates like a bandit. It takes fewer cell sites to get a good quality signal, both voice and data to you.***" (emphasis added)); *AT&T's CEO Discusses Q4 2011 Results - Earnings Call Transcript*, SEEKING ALPHA (Jan. 26 2012), *available at* http://seekingalpha.com/article/322378-at-t-s-ceo-discusses-q4-2011-results-earnings-call-transcript ("In terms of the frequencies that we're interested in, it's no surprise. We tend to favor the lower band, the 700-megahertz spectrum. We have a very, very good position in that particular location so we obviously have a lot of interest in the spectrum that resides down there. We've done a number of transactions in that particular area since the auctions occurred in 2007, so that's obviously an important area for us.").

[30] Ofcom, "Consultation on assessment of future mobile competition and proposals for the award of 800 MHz and 2.6 GHz spectrum and related issues," at 42 (March 22, 2011), *available at* http://stakeholders.ofcom.org.uk/binaries/consultations/combined-award/summary/combined-award.pdf (emphasis added).

Commission similarly touted the distinct advantages of the 700 MHz band, noting (like Jonathan Baker) that such low-band spectrum can provide both coverage *and* capacity advantages: "It has excellent physical characteristics that facilitate wide coverage as well as penetration in buildings, and offers significant bandwidth. This makes it a highly desirable asset for the wireless communications industry, which is confronted with the challenge to meet capacity and ubiquity requirements for rapidly growing wireless traffic."[31]

As described previously, the characteristics of low-band spectrum are particularly essential for operators seeking to provide nationwide service on a competitive basis. In contrast to higher-frequency spectrum, spectrum below 1 GHz can be cost-effectively and efficiently deployed in rural, suburban and urban areas, alike. As the policymaking body for telecommunications in Germany noted of the 800 MHz band, "For physical-technical reasons, the 800 MHz frequencies are suitable **for supply to both rural areas and urban centers. Due to these propagation properties, which are especially well-suited to mobile radio applications, the frequencies are also particularly ideal for nationwide usage**."[32] Similarly, the Netherlands Ministry of Economic Affairs, in a

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[31] Radio Spectrum Policy Group, *Commission Services' Discussion Paper on the Future Use of the 700 Mhz Band in the European Union*, European Commission, at 2 (Jun. 1, 2012), *available at* https://circabc.europa.eu/sd/d/bb24e589-5231-4549-a97e-f453be2612de/RSPG12-425%20-%20Discussion%20Paper%20on%20future%20use%20of%20700MHz.pdf

[32] Decisions of the President's Chamber of the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway of 12 October 2009 on Combining the Award of Spectrum in the Bands 790 to 862 MHz, 1710 to 1725 MHz and 1805 to 1820 MHz with Proceedings to Award Spectrum in the Bands 1.8 GHz, 2 GHz and 2.6 GHz for Wireless Access for the Provision of Telecommunications Services, at 52-53 (2009), *available at* http://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/BNetzA/Areas/Telecommunications/TelecomRegulation/FrequencyManagement/ElectronicCommunicationsServic

report on spectrum bands, observed that the "[cost] difference between sub and supra-1 GHz spectrum is most pronounced, with the cost difference ranging between 8 and 15 times." This has direct effects on an operator's competitiveness, requiring an operator with "only supra-1 GHz spectrum" to expend "significantly larger capital investment" to provide an equivalent level of service.[33] Comreg, the Irish regulator, echoes this point, stating that "while perfect symmetry in sub-1 GHz spectrum distribution between competitors is not necessary to facilitate competition, highly asymmetric distributions of sub-1 GHz spectrum could be detrimental to downstream competition."[34] Not surprisingly, a wide range of developed nations – including all of those described above – have adopted spectrum aggregation rules to prevent – and/or redress – excessive concentration of critical sub-1 GHz spectrum.

C. The Commission Should Formally Acknowledge that Differences Between Spectrum Bands Significantly Impact Competition.

While the Commission has increasingly acknowledged the important competitive implications of utility differences between spectrum bands for providing wireless communications services – in its transaction review,[35] its annual competition reports,[36]

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es/FrequencyAward2010/DecisionPresidentChamber101022.pdf?__blob=publicationFile&v=2 (emphasis added).

[33] *Study on Comparability of Frequency Bands in Different Business Models*, PA Knowledge Limited, at 21-23 (Conducted for Netherlands Ministry of Economic Affairs) (Sept. 17, 2010) <http://www.rijksoverheid.nl/bestanden/documenten-en-publicaties/rapporten/2010/09/23/study-on-comparability-of-frequency-bands-in-different-business-models/study-on-comparability-of-frequency-bands-in-different-business-models.pdf>.

[34] Commission for Communications Regulation, "Multi-Band Spectrum Release," Response to Consultation and Draft Decision, at 107 (Aug. 24, 2011), *available at* <http://www.comreg.ie/_fileupload/publications/ComReg1160a.pdf>.

[35] *Application of AT&T Inc. and Qualcomm Inc.*, Order, 26 FCC Rcd 17589, ¶ 49 (2011) (*AT&T – Qualcomm Order*). ("Based on the record in this proceeding – and the Commission's analysis in the *Fifteenth Annual Mobile Wireless Competition Report* – we

and in general rulemaking contexts[37] – it has not yet formally integrated these facts into its analytical and policy framework for identifying the competitive implications of spectrum aggregation – whether through transactions, Commission spectrum auctions or other mechanisms. The proposition that an operator wishing to provide wireless service nationwide would want to assemble a mix of high and low-band spectrum, however, is entirely uncontroversial. Sprint and other commenters have never dismissed the bands above 1 GHz – and in particular, mature bands such as PCS and AWS that do not face interference risks from adjacent bands – as possessing little value. The crucial obstacle, however, is that while nationwide operators such as Sprint and T-Mobile possess competitive portfolios of spectrum above 1 GHz, the two dominant providers possess over 78% of the competitively-essential spectrum below 1 GHz, including over 80% in the top 50 U.S. markets and over 85% in the top 10 markets.[38]

The relevant question is how the Commission can promote competition within the wireless industry. As Sprint and numerous other comments have urged, the Commission must modify its spectrum screen to more accurately reflect the way in which industry participants view, acquire, and deploy spectrum based on its inherent physical characteristics and regulatory realities.[39] Specifically, the Commission should revise the

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find that it is prudent to inquire about the potential impact of AT&T's aggregation of spectrum below 1 GHz as part of the Commission's case-by-case analysis.")

[36] *Fourteenth Report,* at ¶¶ 268-280; *Fifteenth Report,* at ¶¶ 289-297; *Sixteenth Report,* at ¶¶ 119-124.

[37] *Policies Regarding Mobile Spectrum Holdings*, 27 FCC Rcd 11710, 11725-29, ¶¶ 35-39 (2012).

[38] Figures calculated based on data in the Commission's Universal Licensing System (ULS) as of November 28, 2012.

[39] One revision to the spectrum screen that the Commission should reject – and which would pervert, rather than refine, the screen – is inclusion of additional 2.5 GHz spectrum. As Sprint and other commenters have demonstrated extensively in the open proceeding on Mobile Spectrum Holdings, inclusion of additional 2.5 GHz – particularly

screen to account for the varying utility of different bands. This could take the form of a 'weight' tied to the relative value of different bands in the marketplace, or involve a more extensive analysis by the Commission which incorporates more granular factors.

The Commission must take immediate steps to rectify the competitive imbalance, in which two carriers control the vast majority of the most competitively-important spectrum. An immediate step the Commission should take to rectify this imbalance and prevent further concentration of spectrum below 1 GHz is to adopt a separate bright-line cap for holdings below 1 GHz. This would apply to both secondary-market transactions and spectrum auctions. On this latter point, Sprint notes that a broad range of commenters have advocated for adoption of spectrum aggregation limits in the upcoming 600 MHz auction. These limits would not prevent AT&T and Verizon from participating; however, as a majority of commenters agree, these rules would prevent AT&T and Verizon from extending their dominance in low-band spectrum further, thereby providing meaningful opportunities for competitors to acquire the last remaining low-band spectrum made available for the foreseeable future.

VII. CONCLUSION.

The retail CMRS market today is competitive, and carriers such as Sprint continue to aggressively deploy their resources to expand and upgrade their networks and to provide high quality, attractively priced service plans and equipment. However, in order to help ensure robust competition in the wireless market, the Commission must

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if the Commission continues to treat each megahertz as indistinguishable – would be contrary to the purpose of the screen, cater to the interests of only the two largest carriers, and produce perverse results – specifically, it would give AT&T and Verizon, the two carriers with both the most aggregate spectrum and the vast majority of sub-1 GHz spectrum, a 'greenlight' for further (and significant) spectrum acquisitions under the screen.

address underlying competitive distortions, including excessively priced special access backhaul; the dearth of just and reasonable interconnection arrangements with ILECs (particularly IP voice interconnection arrangements); a heavily ILEC-centric high-cost and broadband universal service fund; a competitive analysis which undervalues the spectrum held by Verizon and AT&T, and spectrum policies which do not ensure that additional spectrum will be made available to smaller carriers on a reasonable and fair basis. The Commission has the jurisdiction and the obligation to address these competitive roadblocks, and a comprehensive record in multiple pending proceedings which justify adoption of orders resolving these issues. Sprint therefore urges the Commission to adopt an order in the instant proceeding finding that the retail CMRS market is competitive and recognizing the need to address the issues discussed above.

Respectfully submitted,

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